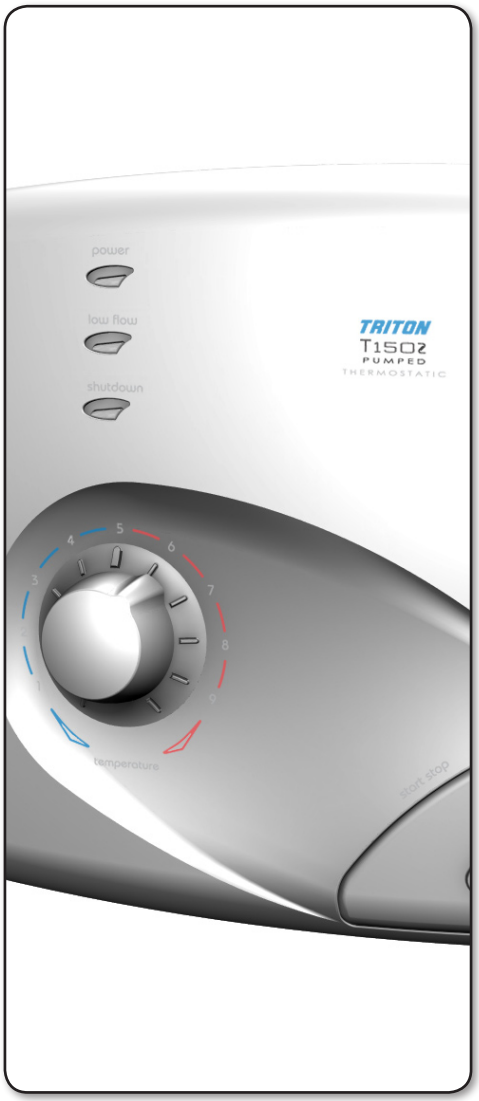
T150Z
pumped thermostatic electric shower



! IMPORTANT !

Under *NO circumstances must this shower be connected directly to a mains water supply.

It is designed for GRAVITY FED COLD WATER systems ONLY !

***Failure to comply may invalidate product warranty**

ACTIVATE YOUR **FREE** PARTS AND LABOUR GUARANTEE **NOW**
www.tritonshowers.co.uk
TRITON

Installation and operating instructions

INSTALLERS PLEASE NOTE THESE INSTRUCTIONS ARE TO BE LEFT WITH THE USER

2180759D September 2009

CONTENTS PAGE

Important safety information 1

Introduction 2
Specifications 2
Advice to users 2

Main components ..... 3 - 4

Electrical requirements ..... 5 - 6

Water requirements 7

Siting of the shower 8

Fitting the shower to the wall 9

Plumbing connections ..... 10 - 11

Electrical connections 12

Shower drain pumps *(not supplied)* ..... 13 - 14

Commissioning ..... 15 - 16

PCB Dip Switch settings 17

Replacing the cover 18

Operating the shower/Operating functions ..... 19 - 21

Instructions for installers and service engineers only 22

Spare parts ..... 23 - 24

Fault finding ..... 25 - 26

BEAB CARE requirements ..... 27 - 31

Guarantee, etc. ..... rear cover

To check the product suitability for commercial and multiple installations, please contact Triton's specification advisory service before installation.

Telephone: 0844 980 0730
Facsimile: 0844 980 0744
E mail: technical@tritonshowers.co.uk

PLEASE READ THIS IMPORTANT SAFETY INFORMATION

- Products manufactured by Triton are safe and without risk provided they are installed, used and maintained in good working order in accordance with our instructions and recommendations.
- **WARNING: DO NOT** operate shower if frozen, or suspected of being frozen. It must thaw out before using.
- **DO NOT** operate the unit if the showerhead or spray hose becomes damaged.
- **DO NOT** restrict flow out of shower by placing showerhead in direct contact with your body.
- **DO NOT** operate the shower if water ceases to flow during use or if water has entered inside the unit because of an incorrectly fitted cover.

1 GENERAL

1.1 Isolate the electrical and water supplies before removing the cover.

1.2 Read all of these instructions and retain them for later use.

1.3 DO NOT take risks with plumbing or electrical equipment.

1.4 Isolate electrical and water supplies before proceeding with the installation.

1.5 The unit must be mounted onto the finished wall surface (on top of the tiles). Do not tile up to unit after fixing to wall.

1.6 Contact Customer Service *(see back page)*, if any of the following occur:

a) If it is intended to operate the shower at pressures above the maximum or below the minimum stated.

b) If the unit shows a distinct change in performance.

c) If the shower is frozen.

1.7 If it is intended to operate the shower in areas of hard water (above 200 ppm temporary hardness), a scale inhibitor may have to be fitted. For advice on the Triton Scale Inhibitor, contact Triton Customer Service.

1.8 The showerhead must be cleaned regularly with descalent to remove scale and debris, otherwise restrictions to the flow on the outlet of the unit will result in higher temperatures and could also cause the Pressure Relief Device in the unit to operate.

1.9 This product is not suitable for mounting into steam rooms or steam cubicles.

2 PLUMBING

2.1 The plumbing installation must comply with Water Regulations, Building Regulations or any particular regulations as specified by Local Water Company or Water Undertakers and should be in accordance with BS 6700.

2.2 The supply pipe must be flushed to clear debris before connecting to the shower unit.

2.3 DO NOT solder pipes or fittings within 300mm of the shower unit, as heat can transfer along the pipework and damage components.

2.4 DO NOT fit any form of outlet flow control as the outlet acts as a vent for the heater can.

2.5 DO NOT use excessive force when making connections to the flexible hose or showerhead, finger tight is sufficient.

2.6 All plumbing connections must be completed before making the electrical connections.

3 ELECTRICAL

3.1 The installation must comply with BS 7671 'Requirements for electrical installations' (IEE wiring regulations), building regulations or any particular regulations as specified by the local Electrical Supply Company.

3.2 This appliance MUST be earthed.

3.3 In accordance with 'The Plugs and Sockets etc. (Safety) Regulations 1994', this appliance is intended to be permanently connected to the fixed wiring of the electrical mains system.

3.4 Make sure all electrical connections are tight to prevent overheating.

3.5 Fuses do not give personal protection against electric shock.

3.6 A 30mA residual current device (RCD) MUST be installed in all UK electric and pumped shower circuits. This may be part of the consumer unit or a separate unit.

3.7 Switch off immediately at isolating switch if water ceases to flow during use.

3.8 Other electrical equipment i.e. extractor fans, pumps must not be connected to the circuits within the unit.

3.9 Switch off at isolating switch when not in use. This is a safety procedure recommended with all electrical appliances.

3.10 As with all electrical appliances it is recommended to have the shower and installation checked at least every two years by a competent electrician to ensure there is no deterioration due to age and usage.

INTRODUCTION

This book contains all the necessary fitting and operating instructions for your electric shower.

Take time to read this book thoroughly and familiarise yourself with all instructions before commencing installation. Please keep it for future reference.

The shower installation must be carried out by a suitably qualified person and in the sequence of this instruction book.

Care taken during the installation will provide a long, trouble-free life from your shower.

SPECIFICATIONS

Electrical

Nominal power rating at 240V	Nominal power rating at 230V
8.5kW – (40A MCB rating)	7.8kW – (40A MCB rating)
9.5kW – (40A MCB rating)	8.7kW – (40A MCB rating)

Pump motor rating 120 Watt – single phase.

Water

Inlet connection – 15 mm diameter.
Outlet connection – ½" BSP male thread.

Entry Points

Water – bottom, back and top.
Cable – bottom, back and top.

Materials

Backplate, cover, controls, showerhead – ABS.
Sprayplate – Acetal.
Elements – Minerally insulated corrosion resistant metal sheathing.

Dimensions

Height – 300 mm
Width – 316 mm
Depth – 90 mm

Standards and Approvals

Splashproof rating IPX4.

Complies with the requirements of current British and European safety standards for household and similar electrical appliances.

Complies with requirements of the British Electrotechnical Approvals Board (BEAB) and BEAB CARE mark (BEAB).

Meets with Compliance with European Community Directives (CE).

ADVICE TO USERS

Important: When first installed the unit will be empty. It is essential the unit should contain water before the elements are switched on. It is vital that the commissioning procedure is followed. Failure to carry out this operation will result in damage to the unit and will invalidate the guarantee.

The following points will help you understand how the shower operates:

a) Temperature/flow rate

The temperature control can be adjusted to provide shower temperatures between 35°C and 47°C.
Alternatively, adjusting a temperature stop mechanism inside the unit to 38°C, 41°C or 43°C maximum can restrict the shower temperature.
Important: To comply with BEAB care mark requirements the unit must not be able to run hotter than 41°C **(this is used in healthcare or special needs environments). The T150Z pumped unit is factory set at 47°C (see page 16) on how to adjust the MAXIMUM temperature stop to** 41°C or below.
At a selected showering temperature the unit will provide the optimum flow rate possible. Note the maximum flow rate for the given temperature will be greater in the summer than in the winter because of the variance in the ambient mains water supply.
Should water pressure/flow to the shower be insufficient for optimum performance then the unit will operate at a reduced power level and provide the highest flow rate possible for the given shower temperature.

b) Temperature stabilisation

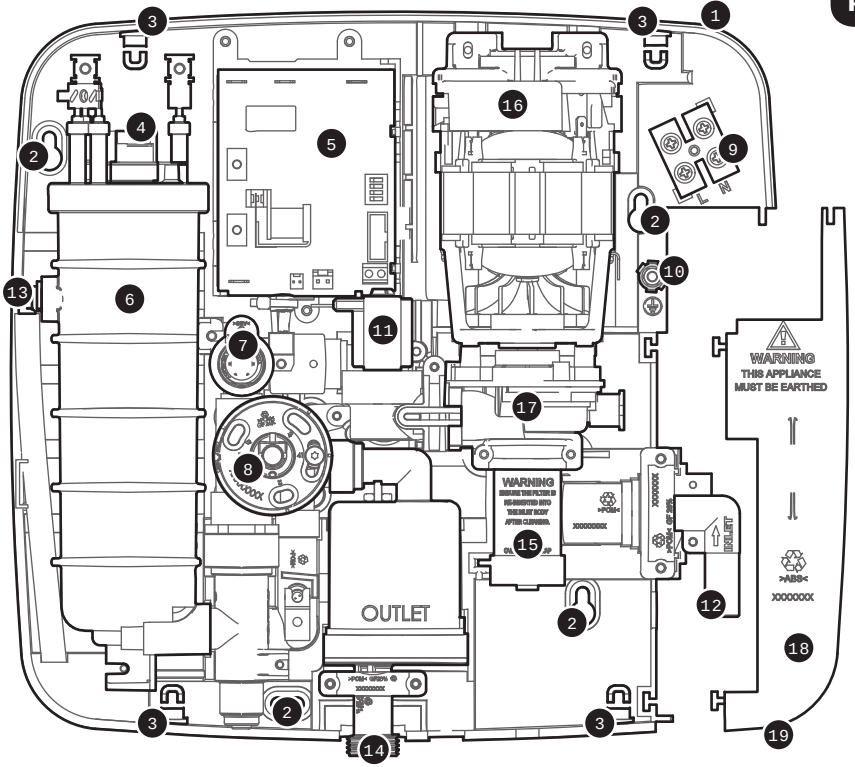
The shower will maintain temperature in accordance with the BEAB care mark.

If ever the water becomes too hot, and you cannot obtain cooler water, first check that the sprayplate in the showerhead has not become blocked.

DO NOT place items such as soap or shampoo bottles on top of the unit. Liquid could seep through the joint between the cover and backplate, and possibly damage the sealing rubber.

MAIN COMPONENTS

Fig.1



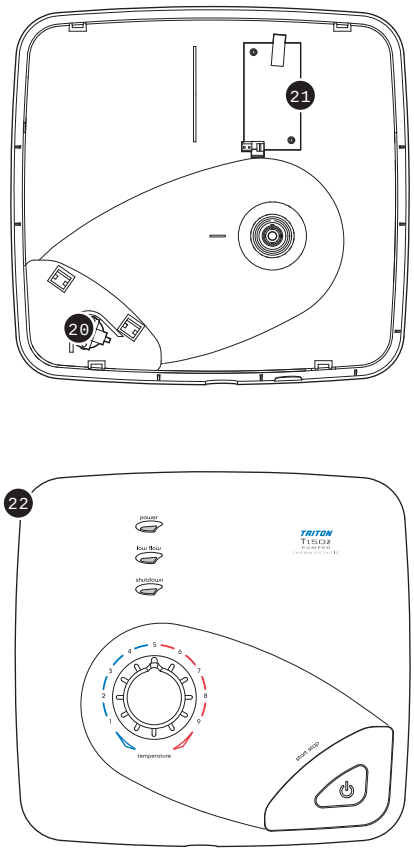
Note: Wires have not been shown for reasons of clarity.

Inside unit **(fig.1)**

1. Top cable/pipe entry
2. Wall screw fixings
3. Cover screw fixings
4. Thermal safety cut-out
5. Power printed circuit board
6. Can and element assembly
7. Flow switch assembly
8. Temperature Control
9. Terminal block
10. Earth connection
11. Solenoid valve
12. Water inlet
13. Pressure relief device (PRD)
14. Shower outlet
15. Filter
16. Pump motor
17. Pump
18. Trimplate
19. Bottom cable/pipe entry

This product is rated at:
30 minutes on / 30 minutes off.

Fig.2



MAIN COMPONENTS (continued)

Inside Cover **(fig.2)**

20. Stop/start switch - Inside

21. Control printed circuit board - Inside

22. Front cover - T150Z pumped

Other items

- Instructions, guarantee, etc.

ELECTRICAL REQUIREMENTS

WARNING!
THIS APPLIANCE MUST BE EARTHED

The installation, supply cable and circuit protection must conform with **BS 7671** (IEE wiring regulations) and be sufficient for the amperage required.
The following notes are for guidance only:

1 The shower must only be connected to a 230-240V ac supply. If you are installing a shower with a kilowatt rating above 9kW, it is advisable to contact the local electricity supply company.

1.1 The electrical rating of the shower is shown on the rating label **(Fig.3)** within the unit.

2 Before making any sort of electrical connection within the installation make sure that no terminal is live. If in any doubt, switch off the whole installation at the mains supply and remove the correct fuse.

3 The shower must be connected to its own independent electrical circuit. **IT MUST NOT** be connected to a ring main, spur, socket outlet, lighting circuit or cooker circuit.

3.1 The electrical supply must be adequate for the loading of the unit and existing circuits.

4 Check your consumer unit (main fuse box) has a main switch rating of 80A or above and that it has a spare fuse way which will take the fuse or Miniature Circuit Breaker (MCB) necessary for the shower **(Fig.4).**

4.1 If your consumer unit has a rating below 80A or if there is no spare fuse way, then the installation will not be straightforward and may require a new consumer unit serving the house or just the shower.

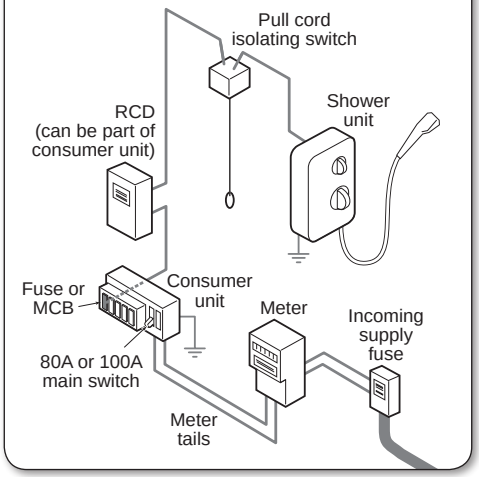
4.2 You will need to contact the local electricity company. They will check the supply and carry out what is necessary.

5 For close circuit protection **DO NOT** use a rewireable fuse. Instead use a suitably rated Miniature Circuit Breaker (MCB) or cartridge fuse **(see Table A).**

5.1 A 30mA residual current device (RCD) must be installed in all UK electric and pumped shower circuits. This may be part of the consumer unit or a separate unit.

Fig.3

Fig.4 Schematic of installation circuit



6 A 45 amp double pole isolating switch with a minimum contact gap of 3 mm in both poles must be incorporated in the circuit.

6.1 It must have a mechanical indicator showing when the switch is in the **OFF** position, and the wiring must be connected to the switch without the use of a plug or socket outlet.

6.2 The switch must be accessible and clearly identifiable, but out of reach of a person using a fixed bath or shower, except for the cord of a cord operated switch, and should be placed so that it is not possible to touch the switch body while standing in a bath or shower cubicle. It should be readily accessible to switch off after using the shower.

7 Where shower cubicles are located in any rooms other than bathrooms, all socket outlets in those rooms must be protected by a 30mA RCD.

8 The current carrying capacity of the cable must be at least that of the shower circuit protection **(see Table B).**

8.1 To obtain full advantage of the power provided by the shower, use the shortest cable route possible from the consumer unit to the shower.

8.2 It is also necessary to satisfy the disconnection time and thermal constraints which means that for any given combination of current demand, voltage drop and cable size, there is a maximum permissible circuit length.

9 The shower circuit should be separated from other circuits by at least twice the diameter of the cable or conduit.

9.1 The current rating will be reduced if the cabling is bunched with others, surrounded by thermal loft or wall insulation or placed in areas where the ambient temperature is above 30°C. Under these conditions, derating factors apply and it is necessary to select a larger cable size.

Table A

Circuit Protection

unit rating	MCB	cartridge fuse
7.0kW	30/32A	30A
7.5kW	32A	35A
8.0kW	40A	35A
8.5kW	40A	45A
9.0kW	40A	45A
9.5kW	40/45A	45A
10.5kW	45A	45A

Table B

Twin and earth PVC insulated cable Current carrying capacity

Installed in an insulated wall	In conduit trunking	Clipped direct or buried in a non-insulated wall
6 mm² 35A	6 mm² 38A	6 mm² 47A
10 mm² 47A	10 mm² 52A	10 mm² 64A
16 mm² 63A	16 mm² 69A	16 mm² 85A

Note: Cable selection is dependent on derating factors

9.2 In the majority of installations, the cable will unavoidably be placed in one or more of the above conditions. This being so, it is strongly recommended to use a minimum of 10mm cabling throughout the shower installation.

9.3 In any event, it is essential that individual site conditions are assessed by a competent electrician in order to determine the correct cable size and permissible circuit length.

WATER REQUIREMENTS

The installation must be in accordance with Water Regulations/Bylaws.

Supply Source	Gravity fed cold water only
Minimum Head	8cm
Maximum static pressure	100 kPa (1 bar) or (10m Head)
Maximum inlet temperature	28°C
Minimum inlet temperature	2°C

WARNING!

Under no circumstances must this shower be connected directly to the mains water supply.

To ensure activation of the heating elements, the shower must be connected to a cold water supply which is **Gravity Fed Only** from a static cold water storage cistern with a minimum capacity of 114 litres (25 gallons).

There must be a maximum head of water of 10 metres and a minimum head of 8 cm as measured between the bottom of the cistern and the top of the shower unit. There must be no other cold water draw-offs between the cistern and the unit and the pipe must not supply water to any other tap or fitting at a lower level.

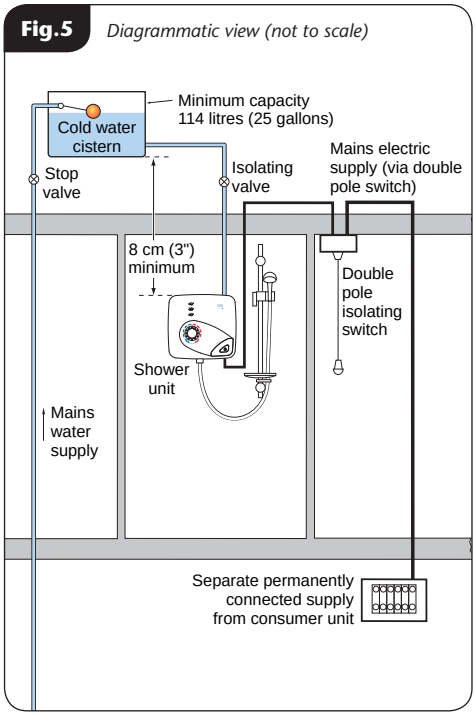
Note: The supply pipe from the cistern should be on the opposite side to the float operated valve to prevent air being drawn into the pipe when the cistern is filling.

If it is intended to operate the shower in hard water areas (above 200 ppm temporary hardness) a scale inhibitor should be fitted.

Fig.5 shows a typical system layout.

DO NOT use jointing compounds on any pipe fittings for the installation.

Fig.5 *Diagrammatic view (not to scale)*



Important: To comply with BEAB care mark in service testing procedure the isolating valve should be located close to the shower unit.

WARNING!

The shower must not be positioned where it will be subjected to freezing conditions.

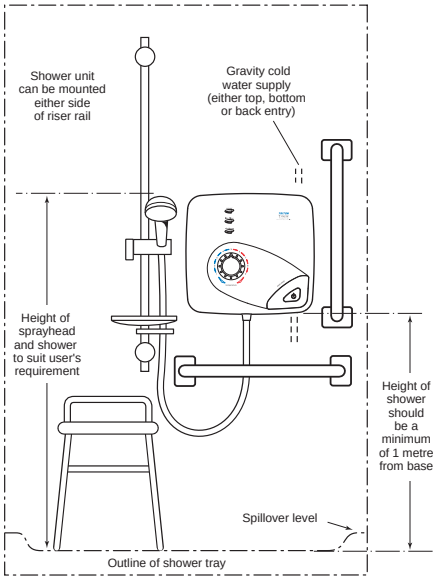

Shower unit can be mounted either side of riser rail
Gravity cold water supply (either top, bottom or back entry)
Height of sprayhead and shower to suit user's requirement
Height of shower should be a minimum of 1 metre from base
Spillover level
Outline of shower tray

Fig.6 *Diagrammatic view (not to scale)*

IMPORTANT: The unit must be mounted on a flat surface which covers the full width and length of the backplate. It is important that the wall surface is flat otherwise difficulty may be encountered when fitting the cover and subsequent operation of the unit may be impaired.

SITING OF THE SHOWER

For ease of servicing, the unit must always be mounted on the surface of tiled walls. Never tile up to the unit.

Refer to **(Fig.6)** for correct siting of shower. Position the unit where it will not be in direct contact with water from the showerhead. Position the shower unit vertically.

Allow enough room between the ceiling and the shower to access the cover top screws.

Note: Water Regulations (shower hose connections) requires the showerhead be 'constrained by a fixed or sliding attachment so that it can only discharge water at a point not less than 25mm above the spill-over level of the relevant bath, shower tray or other fixed appliance'. The use of the supplied soap dish will in most cases meet this requirement, but if the showerhead can be placed within a bath, basin or shower tray, then a double check valve, or similar, must be fitted in the supply pipework to prevent back-flow.

Pressure relief safety device

A pressure relief device (PRD) is designed into the shower unit which complies with European standards. The PRD provides a level of appliance protection should an excessive build up of pressure occur within the shower.

Do not operate the shower with a damaged or kinked shower hose, or a blocked showerhead which can cause the PRD to operate.

When commissioning, the showerhead must be removed from the flexible hose. Failure to follow this procedure may also cause the PRD to operate.

Make sure the shower is positioned over a bath or shower tray because if the PRD operates, then water will eject from the bottom of the unit.

Should this happen, turn off the electricity and water supplies to the shower at the isolating switch and stopvalve. Contact Customer Service for advice on replacing the PRD.

FITTING THE SHOWER TO THE WALL

Note: The control knobs are an integral part of the cover – **DO NOT** attempt to remove them.

Unscrew the two top and bottom two retaining screws **(fig.7)** and lift the cover from the backplate.

Entry positions for the mains water and electric cable are from the top, bottom, or from the back.

Note: Deviations from the designated entry points will invalidate product approvals.

If bottom entry has been chosen, fit the appropriate cut-out in the top of the backplate **(fig.8)**.

If top entry has been chosen, fit the appropriate cut-out in the bottom of the cover **(fig.9)**.

After choosing the site for the shower, use the Installation Template supplied to mark the four fixing holes, the position of which are shown in **(fig.7)**.

Drill and plug the wall.
(An appropriate drill bit should be used. If the wall is brick, plasterboard or a soft building block, appropriate wall plugs and screws should be fitted).

Screw the top two fixing screw into position leaving the base of the screw head protruding 6mm out from the wall.

Hook the backplate over the top of the two screw and fit the other fixing screws into position.

DO NOT fully tighten the screws at this stage, as the fixing holes are elongated to allow for out of square adjustment after the plumbing connections have been completed.

Fig.7

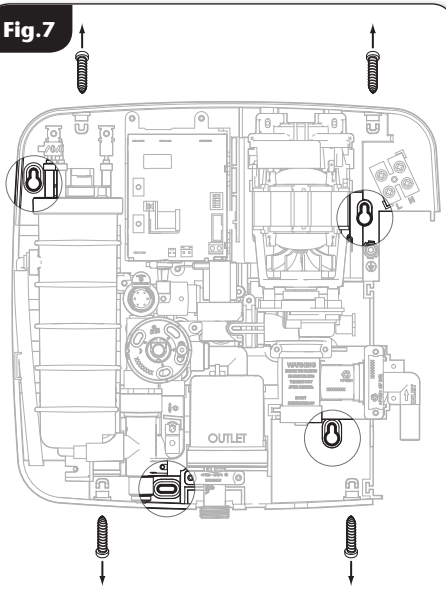


Fig.8

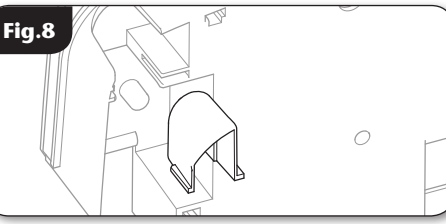
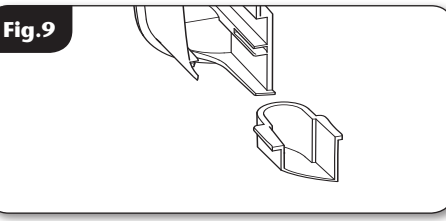


Fig.9



PLUMBING CONNECTIONS

Plumbing to be carried out before wiring

DO NOT use jointing compounds on any pipe fittings for the installation.

DO NOT solder fittings near the shower unit as heat can travel along pipework and damage components.

Compression fittings **Must** be used to connect to the inlet of the shower.

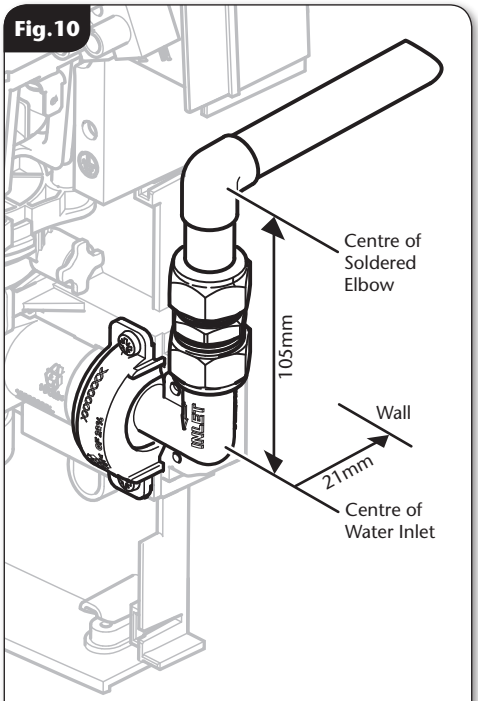
Note: An additional stopvalve (complying with Water Regulations) **Must** be fitted in the water supply to the shower as an independent means of isolating the water in order to carry out maintenance or servicing.

Important: Before completing the connection of the water supply to the inlet of the shower, flush out the pipework to remove all swarf and system debris. This can be achieved by connecting a hose to the pipework and turning on the water supply long enough to clear the debris to waste.

Procedure

Turn off the water supply isolating stopvalve. Connect the water supply to the Inlet of the shower via 15mm copper, stainless steel or plastic pipe using a 15mm x 15mm compression fitting, see **(fig.10)** for advice on Rear Entry fitting.

Fig.10



Note: If installing a feed pipe from the back, the use of a soldered Elbow connector is recommended. It should be positioned approximately 105mm from the inlet connector centre. The centre of the inlet valve to the wall surface is 21mm.

The Inlet fitting is designed to rotate through 180° to allow for either Top or Bottom/Rear entry fitting **(fig.11).**

Note: The inlet fitting is designed to enter a compression fitting only. **DO NOT** use push fit connectors as full engagement cannot be guaranteed. **DO NOT** use excessive force when making these connections.

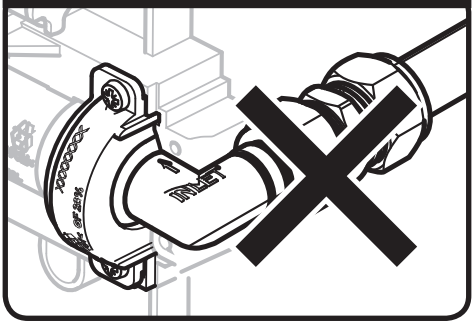
Make sure the backplate is square on the wall and tighten the retaining screws which hold it to the wall.

Turn on the water supply and check for leaks in the pipework connection to the shower.

Note: At this stage no water can flow through the unit.

Important: Using a suitable sealant, always seal around the incoming pipework to prevent water entering the wall.

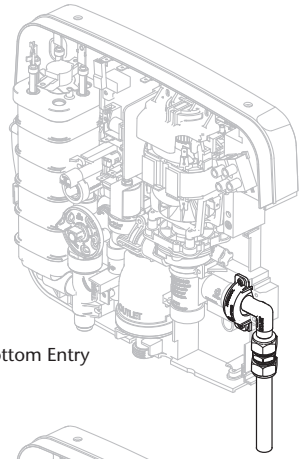
Important: Under No circumstances must the Inlet be rotated 90° and the pipe fitted directly. The shower has not been designed for this method of connection. See below.



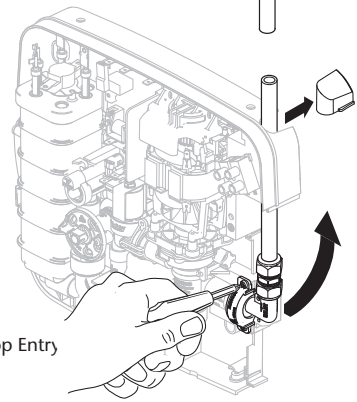
WARNING!

The outlet of the shower acts as a vent and must not be connected to anything other than the hose and showerhead supplied.

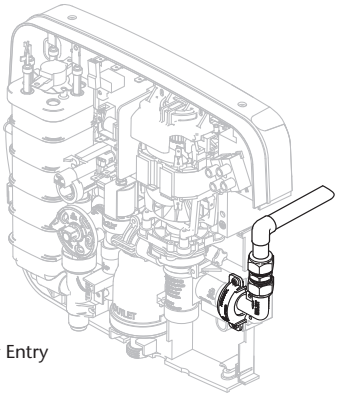
Fig.11



A. Bottom Entry



B. Top Entry



C. Rear Entry

ELECTRICAL CONNECTIONS

Switch off the electricity supply at the mains.

Fig.12 shows a schematic wiring diagram.

The cable entry points are shown in **fig.1**. The cable can be surface clipped, hidden or via 20 mm conduit.

Note: Conduit entry can only be from rear. Route the cable into the shower unit and connect to the terminal block **(fig.13)** as follows:

Earth cable to terminal marked ⏚

Neutral cable to terminal marked **N**

Live cable to terminal marked **L**

Important: Fully tighten the terminal block screws and make sure that no cable insulation is trapped under the screws. Loose connections can result in cable overheating.

Note: The supply cable earth conductor must be sleeved. The outer sheath of the supply cable must be stripped back to the minimum.

The supply cable must be secured either by routing through conduit or in trunking or by embedding in the wall, in accordance with IEE regulations.

The use of connections within the unit, or other points in the shower circuit, to supply power to unspecified equipment other than that listed on page18, will invalidate the guarantee.

DO NOT switch on the electricity supply until the cover has been fitted.

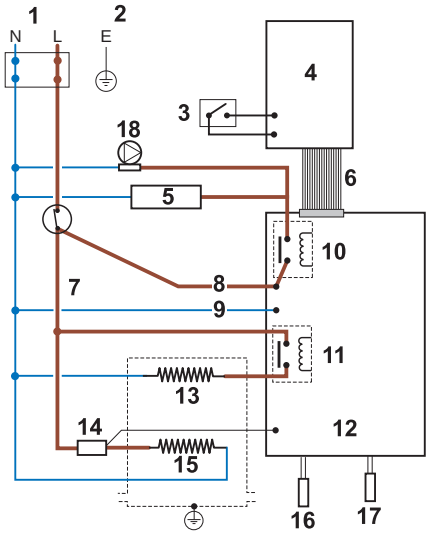
Note: The elements on UK models are to 240V specification and will give a lower kW rating if the voltage supply is below 240V.

WARNING!

After any servicing of the water supply, always flush out the pipework to remove any debris.

In these circumstances the unit should only be re-started by following the commissioning procedure on page 15-16.

Fig.12



1. Terminal block
2. Earth post
3. Start/stop switch
4. Cover PCB
5. Solenoid
6. 10-way ribbon cable
7. Thermal cut-out
8. PCB live
9. PCB neutral
10. relay
11. relay
12. Power PCB
13. 5.25kW
14. Triac 1
15. 3.25kW
16. Outlet thermistor
17. Low flow switch
18. Pump motor

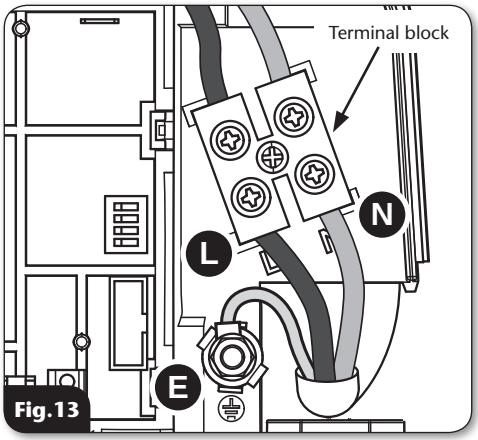


Fig.13

SHOWER DRAIN PUMPS

Principals of operation

When the shower is turned on, an internal sensor sends a signal to the transformer to supply DC voltage to the pump.

When the shower is turned off, a signal is sent to the transformer and after a preset time delay stops the supply of DC voltage to the pump.

(Please refer to the relevant Pump manufacturers installation instructions for full details of operation).

WARNING! The pump is a non-gravity installation. It is advised that where the property is left unattended for an extended period of time, that the water supply to the shower is shut off.

CONNECTING THE CONTROL WIRE

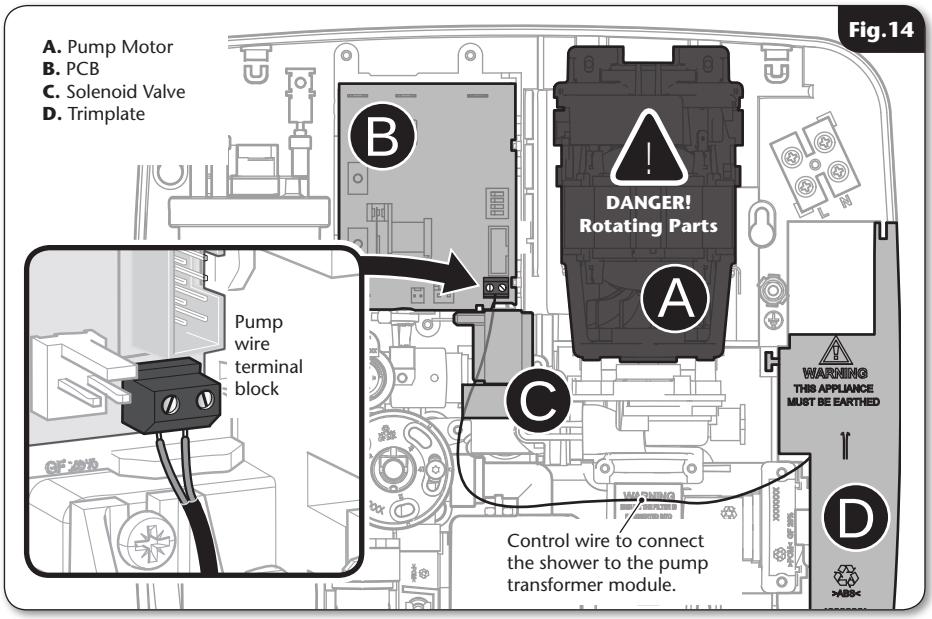
The showers internal Pump Control Wire electrical connector is shown in **(fig.14).**

Note: Numbers 1 and 2 only cover connecting the outgoing wire within the shower - Please refer to the relevant Pump manufacturers installation instructions for Pump connection and relevant IEE regulations that must be met.

1. Connect the Control Wire from the pump to the shower via the terminal block situated at the bottom of the showers PCB.
2. The Control Wire **MUST** be routed behind **B** and out through **D**.

The wire MUST NOT be routed near to A.

Warning! DO NOT route the Control wire near to (A) the Pump Motor



Pumps are not supplied with any products manufactured by Triton Showers *(see page 14 for compatible pumps).*

*COMPATIBLE SHOWER DRAIN PUMPS

The following Pumps are compatible with the shower:

AKW Medicare.

1. AKW Archimedes 4 - **25306-25310 (A4)**
2. AKW Archimedes 4F - **25301-25305 (A4F)**
3. AKW DigiPump 4 - **25251-25255 ****

Technical Helpline: **01905 823 299**

E-mail: **sales@akw-medicare.co.uk**

For AKW Pump information please visit: **www.akw-medicare.co.uk**

CONTOUR SHOWERS.

1. **PRIMO-XTRA 05PP01** - Pump Only.
2. **PRIMO-XTRA 05PP01A** - With UPS-3 -22 gully to suit a shower tray.
3. **PRIMO-XTRA 05PP01B** - With USG1-WH gully to suit a wet floor former.
4. **PRIMO-XTRA 05PP01C** - With CSG1 gully for screed floors.

Technical Helpline: **01606 592 586**

E-mail: **sales@contour-showers.co.uk**

For Contour Showers Pump information please visit: **www.contour-showers.co.uk**

NICHOLLS and CLARKE Ltd.

1. **P6821619** - Phlexiflow Twinned pump waste system, bottom exit tray kit.
2. **P6821620** - Phlexiflow Twinned pump waste system, top exit teay kit.
3. **P6821620** - Phlexiflow Twinned pump waste system, wet floor kit.

Technical Helpline: **0208 586 4600**

E-mail: **Tony.wright-jones@nichollsandclarke.com**

For Pump information please visit: **www.nichollsandclarke.com**

WHALE PUMPS.

1. **SDP044T** - Tray kit.
2. **SDP054T** - Wet Floor Kit.

Technical Helpline: **0845 0694 253**

E-mail: **info@whalepumps.com**

For Whale Pump warranty information please visit: **www.whalepumps.com**

***No endorsements are offered by Triton Showers regarding any third party products listed within this fitting book.**

**** To be used in conjunction with supplied flow sensor on the water inlet (NOT to be connected to Safeguard PCB).**

COMMISSIONING

The first operation of the shower is intended to flush out any remaining unit debris and to make sure the heater unit contains water before the elements are switched on.

- Make sure that the electricity supply to the unit and isolating switch has been turned off, then remove the front cover and disconnect the PCB cable. Also remove the right hand trimplate.
- Turn the water supply to the unit on and turn the bleed screw **(fig.15)** approximately 3 turns out. Make sure that an absorbent cloth is in place to catch any purged water. Let the water flow, approximately 30-60 seconds is advised, until a steady stream of water with no bubbles in it flows from the bleed screw. Once this has been achieved re tighten the bleed screw.
- Refit the right hand trimplate and the cover **(fig.16, 17)** - **DO NOT connect the PCB cable at this time** (This will allow the unit to operate in "commissioning mode". This allows the pump to operate, but does not engage the heater can circuits. This is to allow the system to flush and fill with water and purge any remaining air).
- Secure the cover with a couple of the retaining screws.

IMPORTANT:

When the T150Z being comissioned is to be used in the capacity of a BEAB Care shower, please refer to pages 28 - 29 and make sure that the appropriate sections are completed.

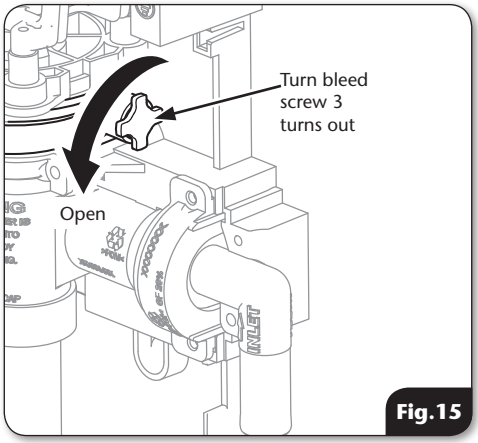


Fig.15

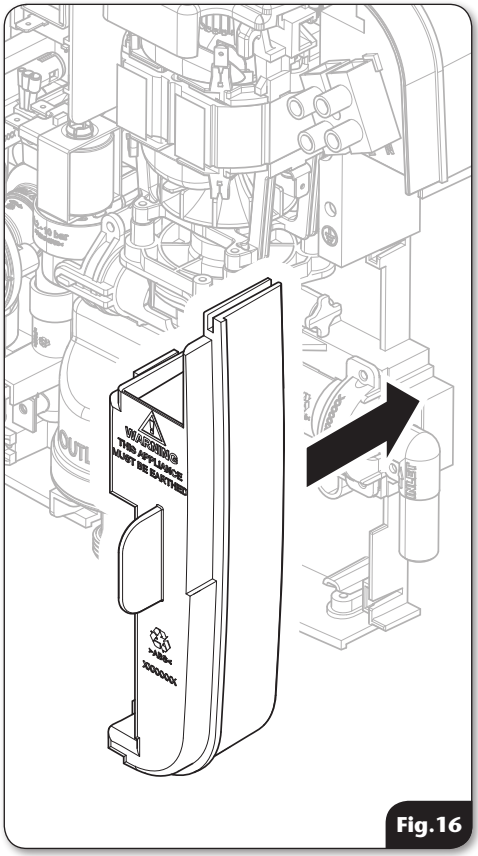


Fig.16

Fig.17

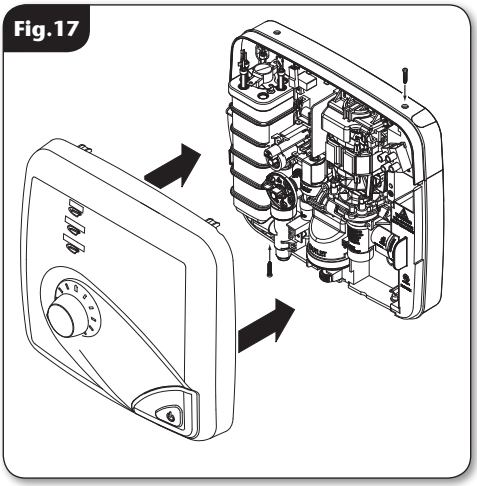
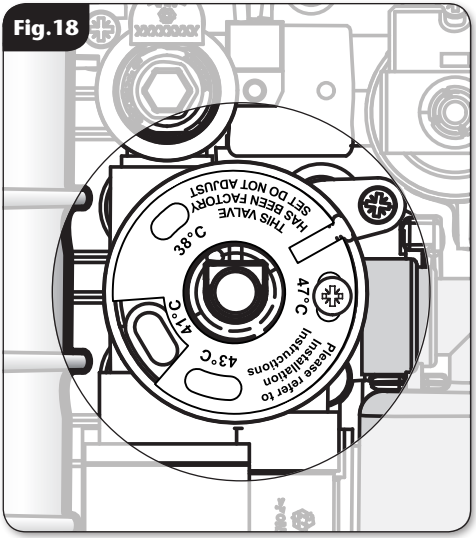


Fig.18



NOTE:

***BEAB care mark specification states a maximum of 41°c.**

If the shower is adjusted above the maximum 41°c the product falls outside the official BEAB care mark specification.

- **The following operation must be carried out with the flexible hose screwed to the outlet but without the showerhead attached. Make sure the outlet of the flexible hose is directed to waste.**
  Turn the Temperature control to number '1' then re enable the power to the isolator switch. Turn on the isolator switch. The pump will operate and water will flow from the shower hose. **Note: The Start/Stop button will not be connected, the only way to exit the "commissioning mode" is to remove power to the PCB.**
- Allow the system to run until the water flows freely without bubbles in it. Turn the Temperature control knob slowly from number 1 to the temperature lock out setting and back again a few times to release any trapped air.
- **Stop the shower using the isolating switch.**
- Remove the cover, connect the PCB ribbon cable **(fig.20)**, refit the cover and secure using all of the retaining screws.

Adjusting the Maximum temperature stop

The temperature control valve has an adjustable maximum temperature stop mechanism that is supplied factory set for 47°C ***(This must be set to 41°C maximum if BEAB Care criteria needs to be met - REFER TO PAGE 30, NOTE 1, FOR APPROVED PROCEDURE ON TEMPERATURE TESTING).**

To select a lower or higher maximum temperature stop setting remove the locking screw from the mechanism and rotate the mechanism to the preferred setting point to align with the screw fixing point. Insert the locking screw through the temperature setting label and lock in place **(fig.18)**.

DIP SWITCH SETTINGS

A four way DIP switch block is mounted on the control PCB that allows the user to configure the shower to perform different functions **(fig.19)**.

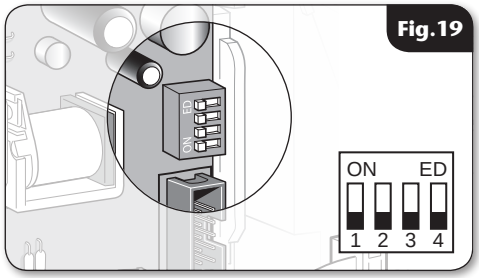
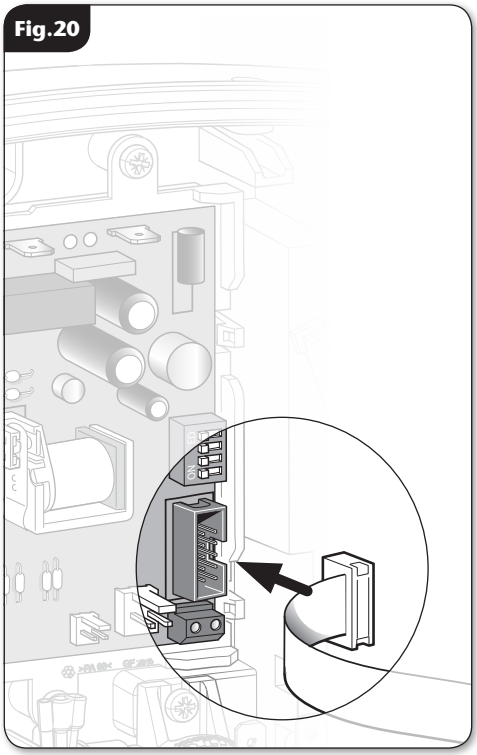


Fig.19

Dip Switch No.	Operation Enabled	Switch Position
DIP switch 1 **On**	Audible Feedback **On** **(Factory setting)**	ON ED 1 2 3 4 **On**
DIP switch 1 **Off**	Audible Feedback **Off**	ON ED 1 2 3 4 **Off**
DIP switch 2 **Off** DIP switch 3 **Off**	Timed Shutdown - **5 Mins**	ON ED 1 2 3 4 **5 Mins**
DIP switch 2 **Off** DIP switch 3 **On**	Timed Shutdown - **10 Mins**	ON ED 1 2 3 4 **10 Mins**
DIP switch 2 **On** DIP switch 3 **Off**	Timed Shutdown - **20 Mins** **(Factory setting)**	ON ED 1 2 3 4 **20 Mins**
DIP switch 2 **On** DIP switch 3 **On**	Timed Shutdown - **30 Mins**	ON ED 1 2 3 4 **30 Mins**
DIP switch 4	Spare	



REPLACING THE COVER

Attached to the display PCB, inside the cover, is a 10-way ribbon cable. The ribbon cable connector must be plugged into the socket located at the right of the power PCB situated inside the unit **(fig.20)**.

Note: The cable connector can be fitted to the socket only one way. The ribbon cable has a coloured edge which is at the bottom when correctly fitted to the socket.

Note: The ribbon cable is preformed to fold flat when the cover is fitted.

Important: Before finally fitting the cover, the following steps must be taken:

a. **Check all plumbing connections are watertight.**

b. **Check terminal block screws are fully tightened.**

c. **Make sure pipe and cable entering the unit do not prevent the cover locating correctly to the backplate.**

Offer the cover to the unit.

Guide into position so that the knob spindle locates correctly (minor adjustment may be necessary to align the knob and spindle). Should any difficulty arise, re check the points above.

While applying slight pressure to the cover, secure in position with the retaining screws.

Turn the electric supply back on at the isolating switch. The '**Power**' indicator will light. No water will flow now until the **Start**/**Stop** button is pressed.

However, it is recommended that the water and electric supplies to the shower are turned off while the riser rail kit is being installed.

The flexible hose can be left attached to the shower outlet. Make sure the supplied sealing washer is fitted.

OPERATING THE SHOWER

When the electricity supply to the shower is switched on at the isolating switch, the **"power on"** indicator will light.

To start the shower

Press the start/stop button and water will flow. After a few seconds, a flow of heated water will be available **(fig.21)**.

To stop the shower (manually)

The shower can be stopped by pressing the start/stop button. When pressed, the phased shutdown will begin and water will cease to flow after a few seconds**(fig.21)**.

To stop the shower (timed Shutdown)

Shutdown times can be set at ***5*, 10, 20** ***(factory setting)*** or **30** minutes. When the indicator illuminates it indicates there is **1 minute** before the timed shutdown will turn the shower off.

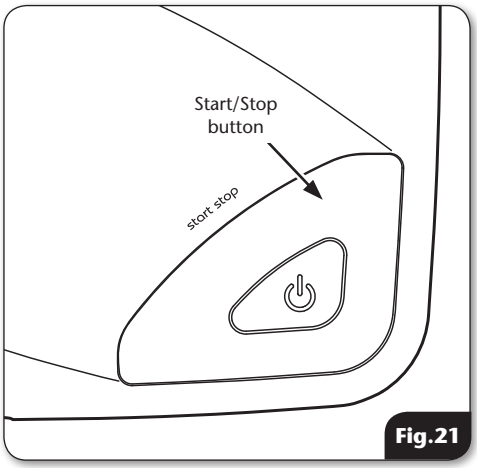


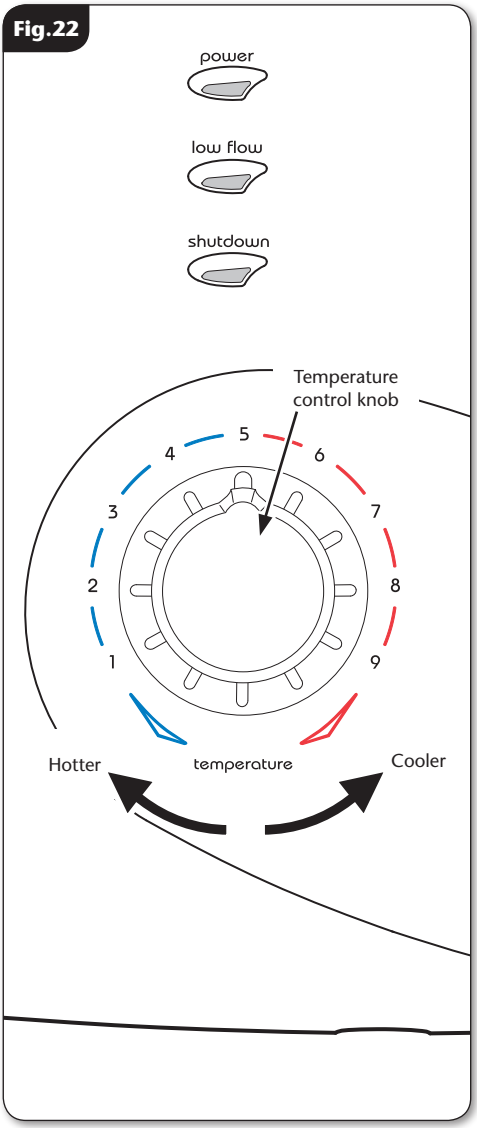
Fig.21

WARNING!

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the appliance.

Fig.22



To adjust the shower temperature

The water temperature is altered by changing the amount of Hot water from the heater can that is mixed with Cold water from the inlet. This is done by moving the temperature control knob **(fig.22).**

Adjusting the temperature control will alter the flow of water through the unit.

After obtaining your preferred showering temperature the number setting can be remembered and left as the preferred setting.

To decrease the shower temperature

Turn the temperature control **anti-clockwise** - this will increase the flow of water through the shower and is indicated by lower numbers and make the water **cooler**.

To increase the shower temperature

Turn the temperature control **clockwise** - this will decrease the flow of water through the shower and is indicated by higher numbers and make the water **hotter**.

When the start/stop button is pressed water will continue to flow in order to remove heated water inside the unit (see phased shutdown process, P21). Water will cease to flow after a few seconds.

After phased shutdown the unit must be isolated via the 45amp-isolating switch.

Note: It is advisable to be certain that the showering temperature is satisfactory by testing with your hand before stepping under the showerhead. There will always be a time delay of a few seconds between selecting a flow rate and the water reaching the stable temperature for that flow rate.

OPERATING FUNCTIONS (fig.23)

Power on indicator (green)
When the electricity supply to the shower is switched on at the isolating switch, the power indicator will light up.

Low flow indicator (red)
If a low flow condition occurs the unit will turn off the water flow immediately.
It will be necessary to wait until water in the unit has reduced to a comfortable temperature, at which point the LED will extinguish. Pressing the start button will then restart the unit.

**Timed Shutdown indicator* (yellow)
The operation of this LED denotes that a "**Timed shutdown**" has been programmed into the unit. When the indicator illuminates it indicates there is 1 minute before the timed shutdown setting. The indicator will then flash for 5 seconds prior to the shower switching off, an audible beep will also commence if it has been set to do so **(see commissioning section, for information on how to program the unit).**

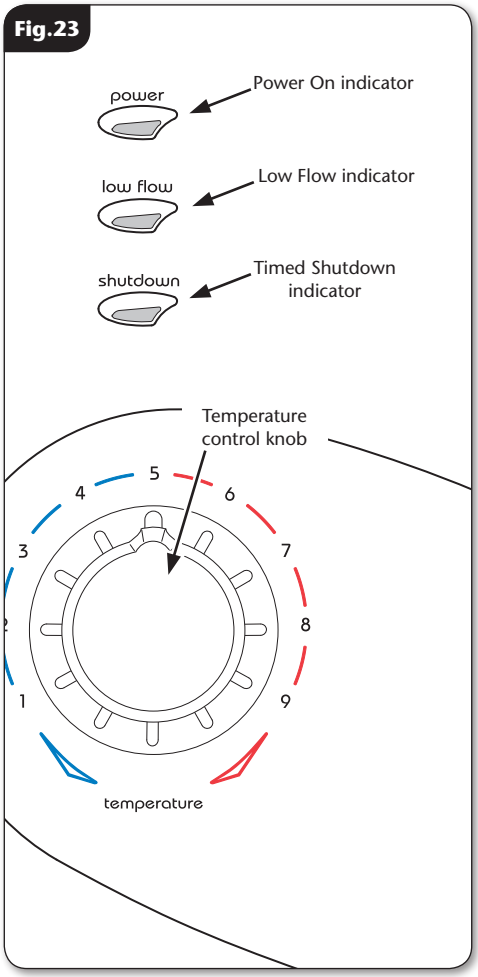
Phased shutdown
In use, every time the **Start/Stop** button is pressed, power is switched off to the elements. Water will continue to flow for a few seconds, flushing out any remaining hot water. This makes sure the next immediate user will not receive a slug of hot water if standing under the showerhead when starting the shower.

Temperature Protection
During normal operation if the flow of water through the unit is restricted power to the elements will be reduced to maintain the shower temperature. When the flow of water through the unit returns to normal power to the elements will be automatically restored to the setting at the time of interruption.

Safety cut-out
The unit is fitted with an over-temperature safety device. In the event of abnormal operation which could cause unsafe temperatures within the unit, the device will disconnect the heating elements and remove power from the electronics making the shower unit inoperable.

It will require a visit from a qualified engineer to identify the nature of the fault and replace the safety device.

Fig.23

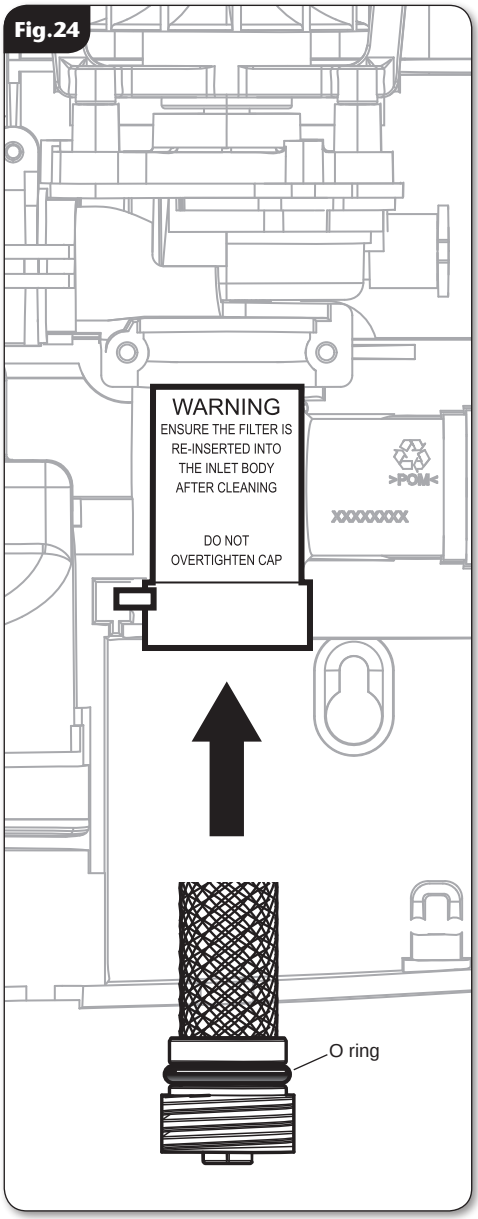


***NOTE**

The "Timed Shutdown Indicator" will only operate if the unit reaches one of the predetermined shut down times of: 5, 10, 20 (factory setting) or 30 minutes. To set the unit to one of these times see page 17.

INSTRUCTIONS FOR INSTALLERS AND SERVICE ENGINEERS ONLY

Fig.24



CLEANING THE FILTER

It is recommended that the filter is periodically cleaned in order to maintain the performance of the shower. It is essential that this operation is carried out by a competent person.

Switch off the electricity and water supply to the shower.

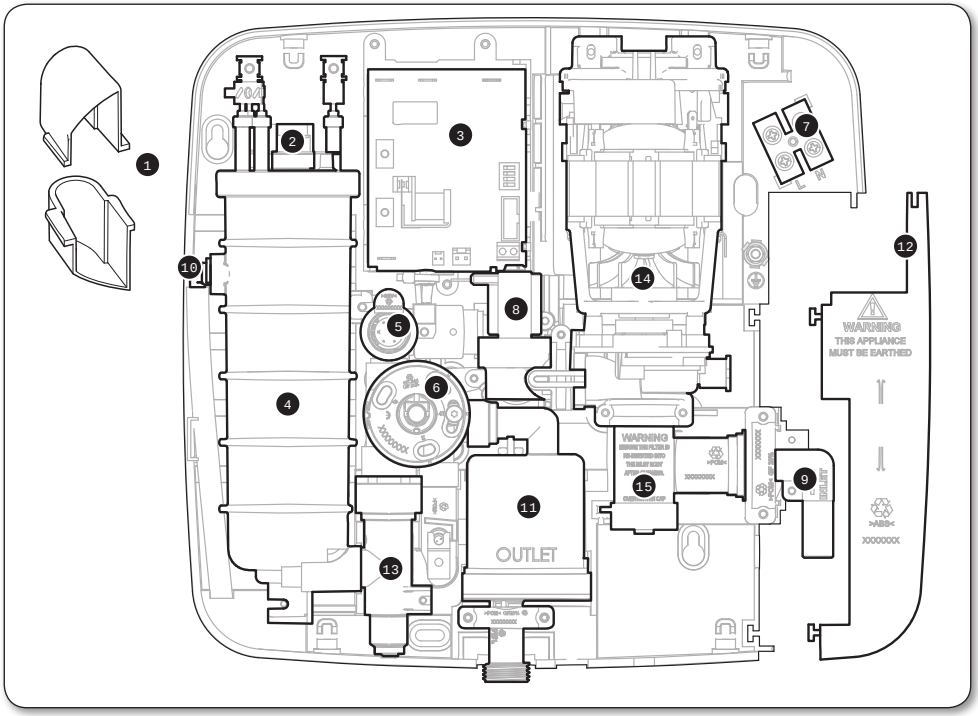
The inlet filter is situated inside the water inlet fitting **(fig.24)**.

To gain access to the filter remove the cover and right hand trim plate. Unscrew the cap on the water inlet fitting.

Inspect the O ring for damage when the filter is removed. Do not over tighten the filter cap on reassembly.

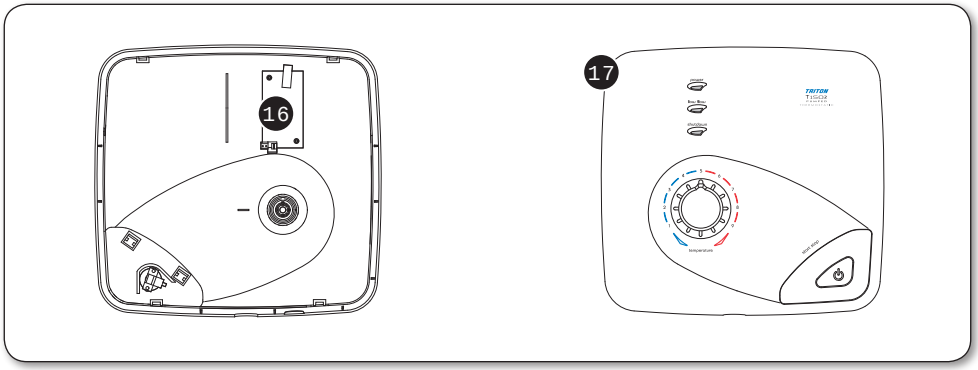
When cleaning the filter, **DO NOT** use a sharp object, as it will cause damage. It is preferable to use an old toothbrush or similar.

SPARE PARTS



Ref.	Description	Part No.
1.	Top and bottom pipe entry trim	83313430
2.	Thermal safety cut-out	22012020
3.	Power printed circuit board	7073709
4.	Can and element assembly	
	8.5Kw	P19520700
	9.5Kw	P19520703
5.	Flow switch assembly	S19521007
6.	Temperature Control assembly	S19520805
7.	Terminal block and wires	S23410901
8.	Solenoid valve assembly	P23410801
9.	Water inlet assembly	P23411001
10.	Pressure relief device (PRD)	82800450
11.	Shower outlet reservoir	P23410802
12.	Access trimplate	7053949
13.	Heater inlet valve assembly	
	8.5Kw	S19520806
	9.5Kw	S19520808
14.	Motor and pump assembly	P15211002
15.	Inlet filter assembly	P23410804

SPARE PARTS



Ref.	Description	Part No.
-	Solenoid outlet elbow assembly (not shown)	P23410803
-	Heater can wire set (not shown)	83313440
-	Triac and wires (not shown)	P19520903
-	Thermister (not shown)	22012030
16.	Front cover PCB	7073708
17.	T150Z Pumped Front cover assembly (includes PCB and start/stop switch)	S23410600

FAULT FINDING

Important: Switch off the electricity at the mains supply and remove the circuit fuse before attempting any fault finding inside the unit.

Problem/Symptom	Cause	Action/Cure
1 Shower inoperable, no water flow.	**1.1** Interrupted power supply.	**1.1.1** Blown fuse or circuit breaker. Check supply Renew or reset fuse or circuit breaker. If it fails again, consult a qualified electrician.
	1.2 Unit malfunction.	**1.2.1** Power cut? Check other appliances and if necessary, contact local Electricity Supply Co.
		1.2.2 Have unit checked. Ring Customer Service.
	1.3 Thermal cut-out operated.	**1.3.1** The thermal cut-out safety device has operated. Have the unit checked by a suitably qualified service engineer or contact Customer Service.
2 Water too hot.	**2.1** Temperature control set incorrectly.	**2.1.1** Alter the temperature control.
	2.2 Unit malfunction.	**2.2.1** Have the unit checked by a suitably qualified service engineer or contact Customer Service.
3 Water too cool or cold.	**3.1** Temperature control set incorrectly.	**3.1.1** Alter the temperature control.
	3.2 Maximum temperature stop set incorrectly.	**3.2.1** Alter the Maximum temperature stop.
	3.3 Unit malfunction.	**3.3.1** Have the unit checked by a suitably qualified service engineer or contact Customer Service.
4 Water will not stop flowing from unit unless switched off at isolating switch.	**4.1** Control ribbon cable is not connected to PCB.	**4.1.1** Remove cover and connect ribbon cable.
5 Pressure relief device has operated (water ejected from PRD tube).	**5.1** Blocked showerhead.	**5.1.1** Clean sprayplate and then fit a new PRD.
	5.2 Twisted/blocked flexible shower hose.	**5.2.1** Check for free passage through hose. Replace hose if necessary and then fit new PRD.
	5.3 Showerhead not removed while commissioning.	**5.3.1** Fit new PRD. Commission unit with showerhead removed.

FAULT FINDING

Problem/Symptom	Cause	Action/Cure
6 Low flow LED permanently on when start/stop bar pressed. Shower will not start.	**6.1** Low flow condition	**6.1.1** Insufficient water flow available. 1. Check showerhead is not blocked 2. Check shower hose is not restricted. 3. Check filter is not blocked. 4. Check water supply to shower is adequate
7 Low flow LED comes on when shower is running. Shower switches off.	**7.1** Low flow condition has caused temperature sensor in the shower to operate.	**7.1.1** Shower will not start until water in the unit has cooled and LED goes off. If problem persists. 1. Check showerhead is not blocked 2. Check shower hose is not restricted. 3. Check filter is not blocked. 4. Check water supply to shower is adequate
8 Low flow LED flashes continuously when start/stop bar pressed. Shower will not start.	**8.1** Flow switch has failed	**8.1.1** Replace flow switch assembly
9 Low flow and shutdown LED's alternately flashing when power turned on to unit. Shower will not start.	**9.1** Start/Stop switch failed	**9.1.1** Replace cover assembly
10 Low flow and shutdown LED'S flashing simultaneously when start/stop bar pressed. Shower will not start.	**10.1** Outlet thermistor failed	**10.1.1** Replace thermistor
11 Low flow and shutdown LED'S permanently on when power is turned on. Shower will not start.	**11.1** Power pcb faulty	**11.1.1** Replace power pcb

Note: Identify cause of operation before fitting new PRD unit. When fitting a new PRD, follow the commissioning procedure.
It is advised all electrical maintenance/repairs to the shower should be carried out by a suitably qualified person.

In the unlikely event of unit failure other than detailed in the fault finding page, please contact Customer Service for advice.

In-service Testing (T150Z pumped)

Designation Code: -IW-S Shower

Commissioning

Where installed (Establishment): _____ Location of Unit: _____

Installed/commissioned by: _____ Signed: _____ Date: _____

Date of Commissioning	*Prior to Installation:						With unit turned on, set the temperature control to maximum temperature stop			
	1 Check unit designation matches the intended use	**2** Check that the Maximum temperature stop is set to 41°c (See page 20)	**3** Water supply static pressure (see page 12 - Water Requirements).	**4** Water supply running pressure (see page 12 - Water Requirements).	**5** Water supply temperature (Range: 5 - 20°C).	**6** Terminal voltage (Range: 230V ± 10%).	**7** Ambient temperature of water supply (see Note 2).	**8** Supply voltage at appliance Terminals (see Note 2).	**9** Maximum water temperature at shower outlet (see Note 3).	**10** Maximum water temperature when water supply is restricted (see Note 4).
dd/mm/yy	IW-S	41°C	bar	bar	°C	V	°C	V	°C	°C
	Yes/No	**Yes/No**								

***Prior to Installation check:**

a) The inlet filter of the shower is free from debris.

b) The in-line check valves or other back-flow prevention devices are in good working order.

c) Any isolating valves on the water supplying the unit are fully opened.

Column 7: This test should be performed by measuring temperature from a gravity fed cold water tap.

Columns 8-10: These tests should be performed after resetting the shower to the default running setting by pressing the '**Start**' button on the shower cover.

List of Test Equipment Used:

Measurement:	**Test equipment used (Model. make, etc)/Method used:**	**Identification:**	**Date of last calibration:**
Supply water pressure			
Voltage			
Water temperature			

Note: All installation, commissioning and in-service testing must be undertaken by a suitably qualified engineer.

In-service Testing Record

Using the same test equipment as above, record the following:

Date	Isolate unit from mains electricity and remove cover.		Replace the cover, switch on the unit and set the temperature control to maximum temperature stop						Signed
	11 Check condition of internal components	**12** Check that the Maximum temperature stop is set to 41°c (See page 13)	**13** Ambient temperature of mains water supply (see Note 2).	**14** Supply voltage at unit terminals (see Note 5).	**15** Outlet water temperature (see Note 6).	**16** Checks made in accordance with (see Note 6).	**17** Outlet water temperature when water supply is restricted (see Note 4).	**18** Date of next in-service check or withdrawal from service (see Table 1).	
dd/mm/yy	**Yes/No**	**Yes/No**	°C	V	°C	**Yes/No**	°C	dd/mm/yy	

Note: All installation, commissioning and in-service testing must be undertaken by a suitably qualified engineer.
(This page may be reproduced for continued recording of In Service Testing)

Notes for commissioning and in-service testing

1. Measuring the Shower Outlet Water Temperature

With the shower running, position the showerhead horizontally and place a funnel under the water flow. Make sure that the funnel mouth collects all of the water emitted from the showerhead. Take a reading using a temperature probe in the collected water flowing from the outlet of the funnel.

Typical dimensions of a suitable funnel are:

Opening diameter: 110mm,
Throat diameter: 15mm.

2. Measuring the Heated Water from Shower Outlet

After resetting the shower to the default setting (press the '**Start**' bar on the shower cover) measure using the method described in (**1.**) above.

3. Measurement of Heated Water from the - Shower Outlet when Restricting the - Water Supply

Progressively restrict the inlet water flow to the unit using the service valve until the 'Low' LED comes on (on the cover) and the shower shuts down with no water flow from the showerhead. Open the service valve slightly and restart the shower using the Stop/Start button. Record the resulting outlet water temperature using the method described in (**1.**) above. If this exceeds 43°C withdraw the shower from service and call Customer Service on **0844 980 0750**.

Note: The service valve should be returned to the fully open position after this test.

4. Measurement of Supply Voltage at Appliance Terminals

Switch off the electricity at the mains supply and remove the circuit fuse. Remove the shower cover, taking care to position it so that it does not hang by the interconnecting ribbon cable.

Replace the circuit fuse and switch on the electrical mains supply. Take the AC voltage reading across the Live and Neutral screws of the mains terminal block.

Take care NOT to touch any other internal components of the shower. Switch off the electricity at the mains supply, remove the circuit fuse and replace the cover using the screws supplied.

Note: This test should only be performed by a suitably qualified engineer.

5. When the Set Maximum Outlet Water Temperature has Changed Significantly

If the set maximum outlet water temperature has changed significantly from the previous test results (greater than ±1°C), check:

a. That the outlet fittings (showerhead/shower hose) are free from restrictions and limescale.

b. That the inlet filter of the shower is free from debris (see page 22).

c. That in-line check valves or other back-flow prevention devices are in good working order.

d. Any isolating valves on the water supplying the unit are fully opened.

If, after making the above checks, an acceptable outlet water temperature is not achieved withdraw the shower from service and contact Triton Customer Care on **0844 980 0750**.

Frequency of in-service testing

Table 1

Conditions for In-service test	Next in-service test
First in-service test.	6 to 8 weeks after commissioning.
If no significant change in water outlet temperature (greater than ±1°C) between commissioning and first test.	12 months after commissioning.
On going service testing.	Annually on the anniversary date when the unit was commissioned.

UK SERVICE POLICY

In the event of a product fault or complaint occurring, the following procedure should be followed:

1. Telephone Customer Service on **0844 980 0750** having available, your details including post code, the model number and power rating of the product, together with the date of purchase.
2. Based on information given over the telephone, a Triton Customer Service Advisor will attempt to diagnose the fault and confirm whether a site visit from a qualified service engineer is required.
3. All products attended to by a Triton service engineer must be installed in full accordance with the Triton installation guide applicable to the product. *(Every product pack contains an installation guide, however, they can also be bought via our Customer Service Spares Department).*
4. Our engineer will require local parking and if a permit is required this must be available to the engineer on arrival at the call.
5. It is essential that you or an appointed representative *(who must be over 18 years of age)* is present for the duration of the service engineer's visit. If the product is in guarantee you must produce proof of purchase.
6. Where a call under the terms of guarantee has been booked and the failure is not product related *(i.e. scaling and furring, incorrect water pressure, pressure relief device operation or electrical/ plumbing installation fault)* a charge will be made. A charge will also be issued if nobody is at home when the service engineer calls or adequate parking/permit is not available.
7. If the product is no longer covered by the guarantee an up front fixed fee will be charged before the site visit.
8. Should proof of purchase not be available on an "in-guarantee" call, or should the service engineer find that the product is no longer under guarantee, the engineer will charge the same fixed price and the customer will be expected to pay the engineer before he leaves. If payment is not made on the day an administration charge will be added to the fixed charge.
9. If a debt is outstanding from a previous visit, or from any other Triton purchase. Triton reserves the right to withhold service until the debt has been settled.
10. Triton takes the health, safety and wellbeing of its employees very seriously and expects customers to treat all staff members with respect. Should any employee feel threatened or receive abuse, either verbally or physically, Triton reserves the right to withhold service and will support the employee with a legal prosecution.

Replacement Parts Policy

Availability: It is the policy of the manufacturer to maintain parts availability for the duration of production and a period of five years thereafter, in accordance with industry standards.

Spare parts are available via our website, **www.tritonshowers.co.uk**, or by telephoning Triton Customer Service Spares Department. Payment should be made by credit/debit card *(excluding American Express or Diners Card).*

Payment can also be made by pre-payment of a pro forma invoice by cheque or money order.

TRITON STANDARD GUARANTEE

Triton guarantee this product against all mechanical and electrical defects arising from faulty workmanship or materials for a period of two years for domestic use only, from the date of purchase, provided that it has been installed by a competent person in full accordance with the fitting instructions.

Any part found to be defective during this guarantee period we undertake to repair or replace at our option without charge so long as it has been properly maintained and operated in accordance with the operating instructions, and has not been subject to misuse or damage.

This product must not be taken apart, modified or repaired except by a person authorised by Triton. This guarantee applies only to products installed within the United Kingdom and does not apply to products used commercially. This guarantee does not affect your statutory rights.

What is not covered:

1. Breakdown due to: ***a)*** use other than domestic use by you or your resident family; ***b)*** wilful act or neglect; ***c)*** any malfunction resulting from the incorrect use or quality of electricity, gas or water or incorrect setting of controls; ***d)*** failure to install in accordance with this installation guide.
2. Repair costs for damage caused by foreign objects or substances.
3. Total loss of the product due to non-availability of parts.
4. Compensation for loss of use of the product or consequential loss of any kind.
5. Call out charges where no fault has been found with the appliance.
6. Call out charges where the water supply cannot be isolated, this includes consequential losses arising from unserviceable supply valves.
7. The cost of repair or replacement of pressure relief devices, showerheads, hoses, riser rails and/or wall brackets, isolating switches, electrical cable, fuses and/or circuit breakers or any other accessories installed at the same time.
8. The cost of routine maintenance, adjustments, overhaul modifications or loss or damage arising therefrom, including the cost of repairing damage, breakdown, malfunction caused by corrosion, furring, pipe scaling, limescale, system debris or frost.

Triton Showers
Triton Road
Nuneaton
Warwickshire CV11 4NR

Triton is a division of Norcros Group (Holdings) Limited

Customer Service: ☎ 0844 980 0750

Trade Installer Hotline: ☎ 0844 980 0730
Fax: 0844 980 0744

www.tritonshowers.co.uk

E-mail: serviceenquiries@tritonshowers.co.uk

Extended Warranty AVAILABLE NOW. Call 0844 980 0740 for more details.

TRITON reserve the right to change product specification without prior notice. E&OA. © TRITON SHOWERS 2009

plumbworld
Big brands, small prices.
Pdf Supplied By http://www.plumbworld.co.uk/